



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/570,057

12/04/2006

Bernt-Ake Sultan

15691.0001USWO

1873

23552 7590 10/14/2010  
MERCHANT & GOULD PC  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

EXAMINER

CHOI, LING SIU

ART UNIT

PAPER NUMBER

1762

MAIL DATE

DELIVERY MODE

10/14/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/570,057	<b>Applicant(s)</b> SULTAN ET AL.	
	<b>Examiner</b> Ling-Siu Choi	<b>Art Unit</b> 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-10, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 11 and 19-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. This Office Action is in response to the amendment filed 07/27/2010. Claims 12-16 were cancelled and claims 18-23 have been added. Claims 1-11 and 17-23 are now pending.

***Claim Analysis***

2. Summary of Claim 1:

A <u>pipe</u> made of a crosslinkable polyethylene composition containing	
	a crosslinkable high-pressure ethylene silane copolymer resin having a content of silane of about 0.1 to 10 wt% and
	less than 40 wt% high density polyethylene, and
	at least one silanol condensation catalyst
wherein <u>the ethylene silane copolymer resin has a density of <math>&gt; 925 \text{ kg/m}^3</math>.</u>	

Summary of Claim 17:

A <u>pipe</u> made of a crosslinkable polyethylene composition comprising	
	an ethylene-vinyltrimethoxysilane copolymer resin having a content of silane of about 0.1 to 10 wt% and
	less than 40 wt% high density polyethylene, and
	at least one silanol condensation catalyst
wherein <u>the ethylene silane copolymer resin has a density of <math>&gt; 925 \text{ kg/m}^3</math>.</u>	

Summary of Claim 22:

Art Unit: 1762

A <u>pipe</u> made of a crosslinkable polyethylene composition, the composition comprising:	
	a crosslinkable high-pressure ethylene silane copolymer resin having a content of silane of about 0.1 to 10 wt-%;
	at least one silanol condensation catalyst; and
	20-30 wt-% high density polyethylene;
wherein <u>the ethylene silane copolymer resin has a density of <math>&gt;925 \text{ kg/m}^3</math></u> ; and <b>the pipe has pressure resistance at 95 °C of at least 4.4 MPa and a failure time of at least 1000 hours.</b>	

Summary of Claim 23:

A <u>pipe</u> made of a crosslinkable polyethylene composition, the composition comprising:	
	a crosslinkable high-pressure ethylene silane copolymer resin having a content of silane of about 0.1 to 10 wt-%;
	at least one silanol condensation catalyst; and
	< 40 wt-% high density polyethylene;
wherein <u>the ethylene silane copolymer resin has a density of <math>&gt;925 \text{ kg/m}^3</math></u> ; and <b>the pipe has pressure resistance at 95 °C of at least 4.4 MPa and a failure time of at least 1000 hours.</b>	

***Claim Rejections - 35 USC § 102/103***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 and 17-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lorigan et al. (EP 0 365 289 A2).

The rejection is adequately set forth in paragraph 6 of the Office Action filed 04/27/2010 and is incorporated herein by reference.

#### ***Allowable Subject Matter***

6. **Claims 11 and 19-21** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and **Claims 22-23** are allowed.

7. Claims 11 and 19-23 are allowable over the closest references: Lorigan et al. (EP 0 365 289 A2).

Lorigan et al. disclose a filled water-crosslinkable silane copolymer composition comprising (A) **a silane copolymer having a silane content of from 2 to 50 wt%,** (B)

Art Unit: 1762

a second polymer prepared from at least one olefin monomer selected from the group consisting of ethylene, propylene, butene, isobutylene, octene, 4-methyl-pentene-1 and hexene, (C) at least one filler in an amount of from 5 to 75 wt% of the total weight of the composition, and (D) **an organometallic silanol condensation catalyst**, wherein the second polymer is selected from the group consisting of low density polyethylene, high density polyethylene, linear low density polyethylene, very low density polyethylene, polypropylene, ethylene-propylene-diene monomer rubber (EPDM) ethylene-propylene copolymer, ethylene-propylene rubber (EPR), ethylene-ethylacrylate copolymer, ethylene-methyl acryate copolymer, ethylene-vinyl acetate copolymer and polybutene-1 and the silane copolymer is ethylene-vinyl trimethoxy silane (claims 1, 5, and 6). Lorigan et al. further disclose that the amount of the second polymer is in the range from 5 to 50 wt% of the total composition, within which the amount is adjusted to achieve the silane content of the composition in the range of 0.5 to 25 wt% (page 4, lines 41-44). Lorigan et al. furthermore disclose that the composition can be processed into a **pipe** (page 2, line 5). However, lorigan et al. do not teach or fairly suggest the claimed pipe, wherein the pipe comprises a crosslinkable high-pressure ethylene silane copolymer resin having a content of silane of about 0.1 to 10 wt-%; at least one silanol condensation catalyst; and high density polyethylene, wherein the ethylene silane copolymer resin has a density of  $>925 \text{ kg/m}^3$  and the pipe has pressure resistance at 95 °C of at least 4.4 MPa and a failure time of at least 1000 hours.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Art Unit: 1762

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

8. Applicant's arguments filed 07/27/2010 have been fully considered but they are not persuasive.

"The Lorigan et al. reference only mentions the possible use of polymers in "useful articles such as pipe" in the introduction (p. 2/1.5) without discussing specific polymers,.....these do not at all relate to pipe applications and particularly not to pressure resistance, tensile and impact properties of pipes as addressed in the present invention. Lorigan et al mentions electrical conductivity, insulation properties and flame retardancy which are typical properties in cable applications but not in pipe applications. It is common knowledge that pipes can be made of a large variety of plastic materials. The material is then chosen depending on the purpose of the pipe."

However, Claims 1-10 and 17-18 do not have the limitation of the pressure resistance for the pipe. Thus, the rejection is properly rejected because Lorigan et al. do recognize the composition being able to be processed into a pipe.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Ling-Siu Choi/

Primary Examiner, Art Unit 1762

October 15, 2010

Application/Control Number: 10/570,057  
Art Unit: 1762

Page 8